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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/621,265

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EXAMINER

HAN, JASON

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

A

Office Action Summary	Application No. 10/621,265	Applicant(s) KATOH ET AL.	
	Examiner Jason M Han	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☒ Claim(s) 1 and 14-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement filed June 17, 2003 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because Reference Number 1, Document Number 10-22529 from Japan is unattainable as disclosed (please corroborate the Document Number). It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 5 – all Drawing elements are objected to with the exception of 22-24. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should

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include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 6 – 31, 31A, 32, 32A, and S2. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 7 – 22, 23, 27, 28, 31, 31A, 32, 32A, and S2. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the

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description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 15 – all Drawing elements are objected to with the exception of 142-144. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the

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description: Figure 16 – 151A, 152A, and S142. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 17 – 142, 143, 151A, 152A, and S142. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

9. The disclosure is objected to because of the following informalities:
- a. Page 10, Line 2: grammatical error: 'un irregular light';
 - b. Page 12, Line 11: grammatical error: 'Hereinbelow, detailed description';
 - c. Page 21, Line 18: typographical error: '41' should read as '44';
 - d. Page 22, Line 10: grammatical error: consider deleting 'greatly';
 - e. Page 22, Paragraph 0076: no such angles are located on Figure 4;
 - f. Page 22, Line 21: typographical error: 'right' should read as 'light';
 - g. Page 28, Line 8: typographical error: '82B' should read as '82A';
 - h. Page 32, Line 6: grammatical error: consider deleting 'greatly';
 - i. Page 32, Line 8: should reference be made to interface plane S131 (as mentioned on Paragraph 0098) rather than exit optical axis J131;
 - j. Page 32, Line 8: grammatical error: consider deleting 'does';
 - k. Page 32, Line 13: reference 'J132' not located on Figure 13.
 - l. Page 36, Paragraph 0113, 0116, 0119: confusing – please consider revision of entire paragraph;
 - m. Page 36, Line 15: typographical error: include hyphen in 'x-coordinate';
 - n. Page 37, Line 10: typographical error: 'P2' should read as 'P3'.
 - o. Page 46, Line 22: typographical error: '44' should read as '144';
 - p. Page 47, Line 16: typographical error: '24C' should read as '144C';
 - q. Page 47, Line 22: typographical error: '71' should read as '171';
 - r. Page 49, Line 8: typographical error: '182B' should read as '182A'.

Appropriate correction is required.

Claim Objections

10. Claim 1 is objected to because of the following informalities: Page 54, Line 14: grammatical error: consider deleting 'greatly'. Appropriate correction is required.

11. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 14-16 been renumbered 13-15 respectively.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1-4, 8, 9-12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada Motokazu (Japanese Publication No. 11-154766) in view of Katsura Yoshinori (Japanese Publication No. 05-121785).

With regards to Claim 1, Motokazu discloses a light emitting diode (LED) lamp comprising a light emitting diode chip encompassed by a convex lens, wherein light emitted from the chip passes through said lens. The convex lens is formed by two different curved surfaces abutted to form a plane orthogonal to a light emitting surface

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of the LED chip [Figure 2]. Motokau teaches that the curved surfaces of the convex lens serve to control refraction of outgoing light [see Field of the Invention]. It is also inherent that one of the curved surfaces of the convex lens refracts outgoing rays of light from the light emitting diode chip more than the other curved surface of the lens.

Motokazu does not disclose a said abutment plane extending off from the center of the light emitting surface of the LED chip.

Yoshinori on the other hand discloses an LED wherein a LED chip is mounted within a transparent resin lens such that the optical axis of said lens is off center of a lead frame where said chip is mounted [Figure 1]. The purpose is to enable the brightest direction of a light emitting element to be tilted without inclining a substrate or forming a lead so as to control an optical axis.

It would have been obvious to modify Motokazu with Yoshinori to form an abutment plane that is orthogonal and extends off the center of the light emitting surface of an LED chip. Thus, said configurations and variations of position within said convex lens will allow for further control of the refraction of outgoing light. Please further note U.S. Patent No. 5924788 – “Illuminating Lens Designed by Extrinsic Differential Geometry”.

14. With regards to Claim 2, it is obvious in the teachings of Yoshinori that the optical axis passing through the apical curved surface of the lens may be at such an inclined angle from the center axis of the lead frame (where the core of the LED chip is located) where a plane exists orthogonal to the light emitting surface, and passes through the

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point where optical axis and lens meet but does not intersect with said chip [Figure 1; see also Means for Solving the Problem – Paragraph 7 of Detailed Description].

15. With regards to Claim 3, Yoshinori discloses an LED lamp wherein more than one LED chips are arrayed in one direction [Figures 5-6, Paragraph 14 of Detailed Description].

16. With regards to Claim 4, Motokazu discloses an LED lamp wherein the convex lens is made up of resin containing various additives, such as a coloring agent, optical stabilization material, a dispersing agent, and a fluorescent substance. The duty of the filter is to cut the wavelength besides a request [Paragraphs 22-23 of Detailed Description].

17. With regard to Claims 8 and 16, both Motokazu [Claim 5] and Yoshinori [Figure 3] teach a LED display unit comprising the LED lamp of Claims 1 and 9 respectively.

18. With regard to Claims 9-12 and 16, it is obvious in Claims 1-4 and 8 (Paragraphs 13-17 above) to incorporate a plurality of curved surfaces to further control the refraction of outgoing light and ultimately produce a more efficient display device. To quote Motokazu, "This invention is a thing which reduces the unnecessary upper quantity of light and which is used as the high brightness light emitting diode which can emit light on a wide-field-of-view square in a longitudinal direction and down on the other hand by making a mold member into a specific configuration [see Effect of the Invention]."

Please further note U.S. Patent No. 5924788 – "Illuminating Lens Designed by Extrinsic Differential Geometry".

19. Claims 5-7 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada Motokazu (Japanese Publication No. 11-154766) in view of Katsura Yoshinori (Japanese Publication No. 05-121785) in further view of Katagiri Chiharu et al. (Japanese Publication No. 62-055973).

With regards to Claim 5, as described in Paragraph 13 above, Motokazu in view of Yoshinori discloses a light emitting diode lamp. Both Motokazu [Figures 2 and 5; Drawing Elements 103, 104, 503, 504] and Yoshinori [Figures 1-7, Drawing Elements 11,12] disclose an LED chip mounted on a lead frame, but not specifically one comprising an LED chip mounted on a black-surface frame such as taught by Chiharu [see Abstract]. Those familiar in the art recognize that a dark background provides a light absorption property as a means for better contrast, and it would therefore be obvious to modify Motokazu in view of Yoshinori to provide a black-surface as taught by Chiharu. Please further note U.S. Patent No. 3609475 – “Light-Emitting Diode Package with Dual-Colored Plastic Encapsulation”.

20. With regards to Claim 6, Motokazu [Figure 4; Drawing Element 410], Yoshinori [Figure 7; Drawing Element 17], and Chiharu [see Abstract] disclose a reflection cup surrounding at least part of a periphery of the LED chip.

21. With regards to Claim 7, Motokazu [Paragraphs 40, 44, and 46 of the Detailed Description] discloses a black-colored resin layering for the lead frame background whereby the LED chip is mounted on.

22. With regard to Claims 14 and 15, as shown above (Paragraph 18), it would be obvious to incorporate a plurality of curved surfaces to further control the refraction of

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outgoing light and ultimately produce a more efficient display device. In addition, Claims 14 and 15 provide the same structure and are functionally equivalent to Claims 6 and 7 respectively.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


The following patents are cited to further show the state of the art with respect to the current application:

Japanese Publication No. 05-275752 to Ishinaga Hiromoto

Japanese Publication No. 08-162673 to Murata Choichiro

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M Han whose telephone number is (571) 272-2207. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



JOHN ANTHONY WARD
PRIMARY EXAMINER

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMH